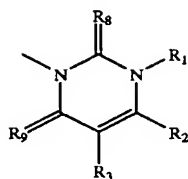


65 W is OR; R is alkyl, alkenyl, or alkynyl, where any of these groups may be unsubstituted or substituted with halogen or cyano;

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Q is



wherein R₁ is alkyl, amino, or haloalkyl;
 R₂ is haloalkyl;
 R₃ is hydrogen;
 R₈ and R₉ are independently oxygen, or sulfur;
 Z is represented by the following:



wherein R₄ is alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, alkylthiocarbonyl, cycloalkyloxy carbonyl, aryloxy carbonyl, arylthiocarbonyl, aryl-thiocarbonyl, heteroaryloxy carbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylaminocarbonyl, alkoxy carbonyl, or arylcarbonyl carbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxy carbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxy carbonyl, alkynyloxy carbonyl, aryl, arylcarbonyl, aryloxy, aryloxy carbonyl, arylthio, heteroaryl, heteroaryloxy carbonyl, or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxy carbonyl, aryl, or heterocycloalkyl; and R₅ is hydrogen; or —CH₂R₁₀,

wherein R₁₀ is carboxyl, alkyl, alkenyl, or alkynyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, cycloalkyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxy carbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonyl, alkenyloxy carbonyl, alkynyloxy carbonyl, aryl, arylcarbonyl, aryloxy, aryloxy carbonyl, arylthio, heteroaryl, heteroaryloxy carbonyl, or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxy carbonyl, cycloalkyl, aryl, or heterocycloalkyl.

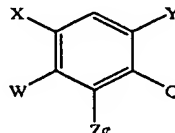
6. A compound selected from the group consisting of 3-(2-amino-4-chloro-6-fluoro-3-methoxyphenyl)-1-methyl-

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6-trifluoromethyl-2,4(1H,3H)pyrimidinedione and 3-(2-amino-4-chloro-6-fluoro-3-methoxyphenyl)-1-amino-6-trifluoromethyl-2,4(1H,3H)-pyrimidinedione.

7. A herbicidal composition, characterized in that it contains at least one compound according to claim 1 and an agricultural adjuvant.

8. A process for preparing a compound represented by the formula I-1 or its salts:

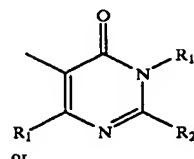
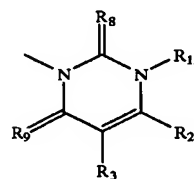


wherein X is hydrogen, halogen, nitro, amino, NHR, N(R)₂, amide, thioamide, cyano, alkylcarbonyl, alkoxy carbonyl, alkylsulfonamide, unsubstituted or substituted alkyl, haloalkyl, alkoxy, haloalkoxy, alkoxy carbonylalkoxy, benzloxy, aryloxy, or heteroaryloxy;

Y is hydrogen, halogen, or nitro;

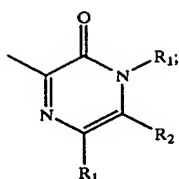
W is hydrogen, OR, SR, NHR, N(R)₂, CH₂R, CH(R)₂, C(R)₃, halogen, nitro, or cyano, where multiple R groups represent any possible combination of substituents described by R; R is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, alkoxy, cycloalkyloxy, aryloxy, heteroaryloxy, alkylsulfonyl, benzyl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, aryloxy carbonyl, or heteroaryloxy carbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, carboxyl, alkyl, haloalkyl, alkylsilyl, alkylcarbonyl, haloalkylcarbonyl, alkoxy, alkoxy carbonyl, haloalkoxy, haloalkoxy carbonyl, alkylsulfonyl, haloalkylsulfonyl, aryl, heteroaryl, or cycloalkyl;

Q is a heterocycle:



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-continued



wherein R_1 is hydrogen, alkyl, haloalkyl, alkenyl, alkynyl, amino, alkoxyalkyl, acetyl, alkoxy-carbonylamino, alkylcarbonylamino, or alkoxy-carbonyl;

R_2 is alkyl or haloalkyl;

R_1 and R_2 could combine to form a five- or six-membered heterocyclic ring;

R_3 is hydrogen, halogen, nitro, amino, alkylamino, haloalkylamino, cyano, or amide;

R_8 and R_9 are independently oxygen, or sulfur;

Q6, Q7, and Q10 may optionally be unsaturated containing one or two double bonds in the 6-membered ring;

Z' is one of the following:



wherein R_4 is alkyl, alkenyl, alkynyl, amino, cycloalkyl, heterocycloalkyl, alkylsulfonfyl, arylsulfonfyl, benzyl, aryl, heteroaryl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy-carbonyl, alkylthiocarbonyl, cycloalkyloxycarbonyl, aryloxycarbonyl, arylthio-carbonyl, aryl-thiocarbonyl, heteroaryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylamino-carbonyl, alkoxy-carbonylcarbonyl, or arylcarbonylcarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxy-carbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonfyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl, or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxy-carbonyl, cycloalkyl, aryl, or heterocycloalkyl; and R_5 is hydrogen or any one of the groups represented by R_4 ; or R_4 and R_5 could combine to form a 4-8 membered heterocyclic ring;

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Q13

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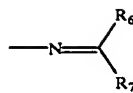
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wherein R_6 represents alkyl, haloalkyl, dialkylamino, unsubstituted or substituted aryl and heteroaryl; and R_7 represents hydrogen, halogen or any of the groups represented by R_6 ;

$-\text{CH}_2\text{R}_{10}$,

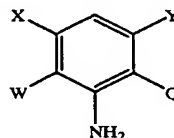
$-\text{CH}(\text{R}_{10})_2$,

$-\text{C}(\text{R}_{10})_3$, or

$-\text{CH}=\text{CHR}_{10}$

wherein R_{10} is carboxyl, alkyl, alkenyl, alkynyl, amino, cycloalkyl, heterocycloalkyl, 25 alkylsulfonfyl, arylsulfonfyl, benzyl, aryl, heteroaryl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, cycloalkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy-carbonyl, alkylthiocarbonyl, cycloalkyloxycarbonyl, aryloxycarbonyl, arylthio-carbonyl, aryl-thiocarbonyl, heteroaryloxycarbonyl, aminocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, heteroarylamino-carbonyl, alkoxy-carbonylcarbonyl or arylcarbonylcarbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, dialkylamino, hydroxyl, carboxyl, alkyl, alkenyl, alkynyl, cycloalkyl, alkylcarbonyl, alkylcarbonyloxy, alkoxy, alkoxy-carbonyl, alkylthio, alkylthiocarbonyl, alkoxythiocarbonyl, alkylaminocarbonyl, arylaminocarbonyl, alkylsulfonfyl, alkenyloxycarbonyl, alkynyloxycarbonyl, aryl, arylcarbonyl, aryloxy, aryloxycarbonyl, arylthio, heteroaryl, heteroaryloxycarbonyl or methylenedioxy, wherein the alkyl moiety or aryl moiety may be substituted with halogen, cyano, nitro, alkyl, alkoxy, haloalkyl, haloalkoxy, alkoxy-carbonyl, cycloalkyl, aryl, or heterocycloalkyl; provided that (1) Z' is not alkyl, haloalkyl, alkenyl, haloalkenyl, monoalkylamino, or dialkylamino, when Q is Q1 and R_2 is haloalkyl,

which comprises of reacting a compound represented by the formula II:

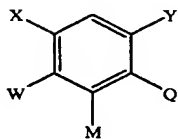


II

with a compound selected from the group consisting of an alkyl halide, alkyl acid halide, aryl acid halide, alkyl acid anhydride, aryl acid anhydride, alkylhaloformate, alkyl isocyanate, aryl isocyanate, alkyl dihalide, aliphatic aldehyde, aliphatic ketone, aromatic aldehyde, and aromatic ketone.

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9. A compound represented by the formula III:

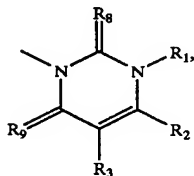


wherein X is hydrogen, halogen, nitro, amino, NHR, N(R)₂, amide, thioamide, cyano, alkylcarbonyl, alkoxy carbonyl, alkylsulfonamide, unsubstituted or substituted alkyl, haloalkyl, alkoxy, haloalkoxy, alkoxy carbonylalkoxy, benzyloxy, aryloxy, or heteroaryloxy;

Y is hydrogen, halogen, or nitro;

W is hydrogen, OR, SR, NHR, N(R)₂, CH₂R, CH(R)₂, C(R)₃, halogen, nitro, or cyano, where multiple R groups represent any possible combination of substituents described by R; R is hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, heteroaryl, alkoxy, cycloalkyloxy, aryloxy, heteroaryloxy, alkylsulfonyl, benzyl, alkylcarbonyl, alkenylcarbonyl, alkynylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxy carbonyl, aryloxy carbonyl, or heteroaryloxy carbonyl, where any of these groups may be unsubstituted or substituted with any of the functional groups represented by one or more of the following: halogen, cyano, nitro, amino, carboxyl, alkyl, haloalkyl, alkylsilyl, alkylcarbonyl, haloalkylcarbonyl, alkoxy, alkoxy carbonyl, haloalkoxy, haloalkoxy carbonyl, alkylsulfonyl, haloalkylsulfonyl, aryl, heteroaryl, or cycloalkyl;

Q is a heterocycle:



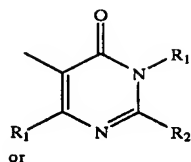
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Q12

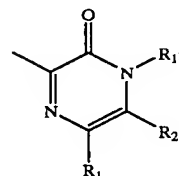
III

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Q13

wherein R₁ is hydrogen, alkyl, haloalkyl, alkenyl, alkynyl, amino, alkoxyalkyl, acetyl, alkoxy carbonylamino, alkylcarbonylamino, or alkoxy carbonyl;

R₂ is alkyl or haloalkyl;

R₁ and R₂ could combine to form a five- or six-membered heterocyclic ring;

R₃ is hydrogen, halogen, nitro, amino, alkylamino, haloalkylamino, cyano, or amide;

R₈ and R₉ are independently oxygen or sulfur;

M is nitro.

10. A method for controlling undesired vegetation which comprises applying to a locus to be protected a herbicidally effective amount of a compound of claim 1.

Q1

11. The method of claim 10 wherein the locus to be protected is a cereal crop field.

12. The method of claim 11 wherein the compound of claim 1 is applied to soil as a preemergent herbicide.

13. The method of claim 11 wherein the compound of claim 1 is applied to plant foliage.

14. A method to defoliate potato and cotton using a compound of claim 1.

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